



APPENDIX A

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83.

A process of screening a candidate substance for its ability to bind to a mu opioid receptor comprising:

- a) providing a recombinant mu opioid receptor polypeptide comprising the contiguous amino acid sequence of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:8, or SEQ ID NO:17; and
- b) testing the ability of said candidate substance to bind to said opioid receptor.

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84.

The process of claim 83 wherein the step of testing the ability of the candidate substance to bind to the opioid receptor involves determining the binding affinity of the candidate substance to the receptor.

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85.

The process of claim 83, wherein the step of testing the ability of the candidate substance to bind to the opioid receptor involves determining the ability of the candidate substance to activate the receptor.

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86.

A process for screening a candidate substance for its ability to bind to a mu opioid receptor comprising:

- (a) providing a recombinant opioid receptor polypeptide encoded by a nucleic acid sequence comprising at least 35 contiguous nucleotides of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7;
- (b) contacting the candidate substance with the recombinant opioid receptor polypeptide; and
- (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.

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87.

The process of claim 86, wherein the nucleic acid sequence comprises at least 45 contiguous nucleotides of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7.

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88. The process of claim ~~86~~⁴, wherein the nucleic acid sequence comprises at least 50 contiguous nucleotides of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7.

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89. The process of claim ~~86~~⁴, wherein the nucleic acid sequence comprises at least 75 contiguous nucleotides of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7.

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90. The process of claim ~~86~~⁴, wherein the nucleic acid sequence comprises at least 100 contiguous nucleotides of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7.

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91. The process of claim ~~86~~⁴, wherein the nucleic acid sequence comprises the nucleotide sequence of SEQ ID NO:7.

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92. The process of claim ~~86~~⁴, wherein detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide involves measuring (i) the ability of the recombinant opioid receptor polypeptide to bind the candidate substance; (ii) the ability of the candidate substance to activate ion channels in a cell membrane; or (iii) modulation of ion channels in the cell membrane of part (ii).

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93. The process of claim ~~86~~⁴, wherein recombinant opioid receptor polypeptide is chimeric.

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94. A process for screening a candidate substance for its ability to bind to an opioid receptor comprising:

- (a) expressing a recombinant opioid receptor polypeptide encoded by a nucleic acid sequence comprising at least 35 contiguous bases of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7;
- (b) contacting the candidate substance with the recombinant opioid receptor polypeptide; and

- (c) detecting the ability of the candidate substance to bind to the recombinant opioid receptor polypeptide.

¹³
~~95.~~ The process of claim ¹²~~94~~, wherein the nucleic acid sequence comprises at least 40 contiguous nucleotides of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7.

¹⁴
~~96.~~ The process of claim ¹²~~94~~, wherein the nucleic acid sequence comprises at least 45 contiguous nucleotides of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7.

¹⁵
~~97.~~ The process of claim ¹²~~94~~, wherein the nucleic acid sequence comprises at least 50 contiguous nucleotides of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7.

¹⁶
~~98.~~ The process of claim ¹²~~94~~, wherein the nucleic acid sequence comprises at least 75 contiguous nucleotides of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7.

¹⁷
~~99.~~ The process of claim ¹²~~94~~, wherein the nucleic acid sequence comprises at least 100 contiguous nucleotides of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7.

¹⁸
~~100.~~ The process of claim ¹²~~94~~, wherein the nucleic acid sequence comprises the nucleotide sequence of SEQ ID NO:7, including the guanine nucleotide at position 389 of SEQ ID NO:7.

¹⁹
~~101.~~ The process of claim ¹²~~94~~, wherein recombinant opioid receptor polypeptide is chimeric.